

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A method for synthesizing single wall carbon nanotubes, the method ~~carbon nanostructures~~ comprising the steps of:

providing a substrate having a deposition mask;

depositing a bimetallic or trimetallic metalorganic layer on the substrate, wherein at least a portion of the bimetallic or trimetallic metalorganic layer is deposited on an unmasked portion of the substrate, and wherein the bimetallic or trimetallic metalorganic layer comprises an organic portion and an inorganic portion, and wherein the bimetallic or trimetallic metalorganic layer has a thickness between ~~about~~ 1 micron and ~~about~~ 30 microns;

removing the deposition mask from the substrate;

exposing said portion of the bimetallic or trimetallic metalorganic layer to air;

pyrolyzing the organic portion of said portion of the bimetallic or trimetallic metalorganic layer to form a growth catalyst on the substrate; and

exposing the substrate to a carbon precursor gas at a deposition temperature to form single wall carbon nanotubes ~~carbon nanostructures~~.

2. (Currently amended) The method of claim 1, wherein the bimetallic or trimetallic metalorganic layer comprises a metalorganic [[is]] selected from ~~the group consisting of~~: iron phthalocyanine, molybdenum phthalocyanine, nickel phthalocyanine, copper phthalocyanine, or a combination ~~and combinations~~ thereof.

3. (Previously Presented) The method of claim 1, wherein the bimetallic or trimetallic metalorganic layer is deposited by a physical vapor deposition process.

4. (Canceled)

5. (Currently amended) The method of claim 1, wherein the deposition mask comprises ~~is composed of~~ a metal oxide.
6. (Currently amended) The method of claim 1, wherein the deposition mask comprises ~~is composed of~~ a substance selected from ~~the group consisting of~~ silicon oxide ~~[[and]]~~ or aluminum oxide.
7. (Currently amended) The method of claim 1, wherein the unmasked portion of the substrate has a top surface comprising ~~composed of~~ a metal oxide.
8. (Original) The method of claim 7, wherein the metal oxide is selected from the group consisting of silicon oxide, aluminum oxide, and magnesium oxide.
9. (Currently amended) The method of claim 1, wherein the organic portion of said portion of the bimetallic or trimetallic metalorganic layer is pyrolyzed by heating said portion of the bimetallic or trimetallic metalorganic layer to a temperature of between ~~about~~ 450°C and ~~about~~ 500°C.
10. (Currently amended) The method of claim 1, wherein said portion of the bimetallic or trimetallic metalorganic layer is exposed to air for between ~~about~~ 2 hours to ~~about~~ 4 hours.
11. (Original) The method of claim 1, wherein the growth catalyst comprises metal growth catalyst particles.
12. (Currently amended) The method of claim 1, wherein the carbon precursor gas comprises ~~[[is]]~~ methane.
13. (Currently amended) The method of claim 1, wherein exposing the substrate to a carbon precursor gas comprises exposing the substrate to an atmosphere comprising ~~containing~~ methane, argon, and hydrogen.
14. (Currently amended) The method of claim 13, wherein the substrate is exposed to the carbon precursor gas for between ~~about~~ 15 minutes and ~~about~~ 60 minutes.

15. (Currently amended) The method of claim 1, wherein the deposition temperature is ~~about~~ 700°C.

16. (Previously presented) The method of claim 1, wherein the bimetallic or trimetallic metalorganic layer is produced by deposition of a metalorganic substance and the metalorganic substance is purified prior to deposition of the bimetallic or trimetallic metalorganic layer.

17. (Previously presented) The method of claim 1, wherein the exposing said portion of the bimetallic or trimetallic metalorganic layer to air is performed prior to removing the deposition mask from the substrate.

18. (Canceled)

19. (Currently amended) The method of claim 1, wherein said carbon nanostructures are one-dimensional ~~one dimensional~~ carbon nanostructures.

20-42. (Canceled).

43. (New) The method of claim 1, wherein the bimetallic or trimetallic metalorganic layer has a thickness of less than 5 microns.

44. (New) The method of claim 43, wherein the bimetallic or trimetallic metalorganic layer has a thickness of 1 micron.

45. (New) The method of claim 43, wherein the bimetallic or trimetallic metalorganic layer has a thickness of 2 microns.